

## ABSTRACT

A bypass control section (6) maintains a bypass switch (5) in the ON state during the period when a battery voltage ( $V_i$ ) is higher than the output voltage ( $V_o$ ) to an external load (L). Upon falling of the output voltage ( $V_o$ ) at a desired voltage ( $E_T$ ), a converter control section (4) starts switching control at once, and a step-up chopper (3) promptly starts boost operation. The bypass control section (6) maintains the bypass switch (5) in the ON state from the start of the boost operation of the step-up chopper (3) until the match between the battery voltage ( $V_i$ ) and the output voltage ( $V_o$ ).